# CARDIO-SPASM.[1]

## WITH REPORT OF AN OPERATIVE CASE.

BY JOHN F. ERDMANN, M.D.,

OF NEW YORK CITY,

Clinical Professor of Surgery in the University and Bellevue Hospital Medical College.

TWENTY months have elapsed since the operation in this case, having felt that a sufficient amount of time should be given to demonstrate a cure before reporting it in detail as a cure.

The patient, a female, thirty-three years of age, called upon me on the 7th day of September, 1903, and gave the following history: There was no family history of any note whatever that might in the least have any bearing upon her condition. She has been married four years, never had any children, and has had no occasion to be of a nervous temperament, although she had taught school for a number of years previous to her marriage.

Three years ago, had noticed a peculiar swallowing rattle, as she expressed it, in the throat, which in four or six weeks was followed by difficulty in swallowing foods and cold drinks, giving her an impression of pressure back of the lower portion of her sternum. All things seemed to go down the wrong way. At times she could apparently swallow substances to amount to a small slice of bread. There was invariably, after a short period, vomiting of the material swallowed, varying in extent from the entire quantity to about two-thirds of that swallowed.

From September to Christmas of 1902, she gradually lost weight, weighing during the holidays one hundred and twenty-five pounds, as compared to one hundred and eighty pounds in September—a loss of fifty-five pounds in three months. She now, September 1903, weighs one hundred and forty-four pounds.

She further states that she is positive from her sensations that the materials swallowed all collect or lodge above her stomach, and in the region of her pain, and that her pain is of a boring

[1] Read before the New York Surgical Society, November 22, 1905.

character, travels up to her throat, and is somewhat increased during her menstrual periods. That lying down does not cause the ingested stuffs to flow out, but that she is more prone to backache when occupying this position. A small amount of mucus also is vomited each time. That she has gained the nineteen pounds in weight,—the difference between the Christmas weight of one hundred and twenty-five pounds and that of to-day, September seventh,—by the use of the stomach tube which some one of her physicians had recommended. She states that during the entire winter of 1902, large sized dilators and a stomach tube had been employed. Early in the history of her trouble hot drinks would relieve her pain, but at the present time are entirely inefficaceous.

*Examination.*—The patient is a female of large build, and rather poorly nourished, although she says her general health is good. Her skin and muscles are flabby. Abdominal palpation reveals no visceral enlargement. Lungs and heart negative.

Upon examining the œsophagus, No. 40F. enters readily until within the vicinity of the cardia, No. 26F. and No. 20F. also are checked at the same distance, while No. 16F. passed, but was gripped slightly. Successive sizes were then passed up to No. 26F.; a rest for twenty-four hours was advised, and bland, semi-solid food ordered. She returned on the following day, September 8, and owing to some soreness, No. 28F. only was passed. On September 9, she reports having swallowed some bread and a bit of beefsteak, without the use of the stomach tube. Bougies up to No. 36F. readily passed.

September 11 reports that she has been taking solids, but that she has a distinct sense of fullness at the usual site, before a satisfying quantity of food has been taken. To-day for the first time, complains of a lump or ball gripping her in the throat, pointing at this time to the larynx; No. 36F. passed. Patient wished to return to her home, so I instructed her to pass a large bougie herself, and No. 40F. was supplied her.

She did not report in person again until January 5, 1904, although by letter she stated that she was able to swallow fairly well, but still had her daily pressure and "fullness" sensations, and that she still vomits.

At this time, January 5, 1904, she is somewhat heavier than

in September, 1903, and says that she has been taking bread and finely chewed meats, but still has her sternum pressure. No. 40F. bougie does not pass; No. 36F. passed with slight difficulty.

During the period dating from September 9, 1903, to January 5, 1904, I was inclined to feel that a fair element of hysteria had more or less to do with the spasmodic condition, and had her placed upon bromides and valerianates, basing my reasons for such medication upon her statements of increase in trouble at the time of her menstrual periods, and also upon the ball and gripping (globus hystericus) sensation in her laryngeal region.

She (January 5, 1904) now comes to me telling me that the diagnosis of œsophageal diverticulum has again been made, and desires me to again make a careful examination. I was satisfied that her lesion was at the cardia, because no deflection or check occurred to the bougie in any portion of the upper four-fifths of the œsophagus. For further satisfaction to the patient, and to eliminate any stomach lesion that might, by reflex, influence the cardia, I recommended her to Dr. George Roe Lockwood, who advised her to remain under his observation for a few days.

She returned home, and on January 11, was admitted in the Private Hospital Association under Dr. Lockwood's care.

10 A.M.—Tube passed and fed; unable to hold half-pint.

1 P.M.—About fourteen ounces of fluid taken without the tube.

5 P.M.—Dr. Lockwood passed the tube, and withdrew one pint of sour smelling liquid.

From this date on, until January 27 with few exceptions, the patient was fed by the tube, and occasionally by the rectum. A bougie was passed of largest size almost daily, and the stomach tube passed and allowed to remain for a period of thirty minutes. During this period there would be frequent expulsions or siphonages of various types of colored fluids, and of pap to fluid consistency, varying in quantity from a few ounces to several pints. Passing the bougie was easily accomplished one day, and the next an absolute obstruction would be met with, while the stomach tube rarely encountered any obstruction.

January 27th the patient weighs one hundred and thirty pounds, being a loss of fourteen pounds in a month.

Dr. Lockwood was satisfied that all mechanical and medicinal

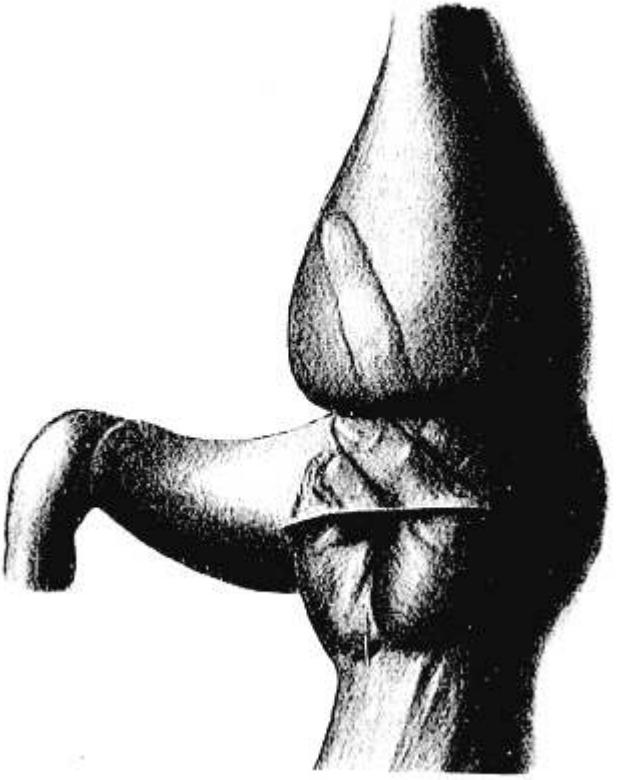

Fig. 1.—Cardio-spasm.

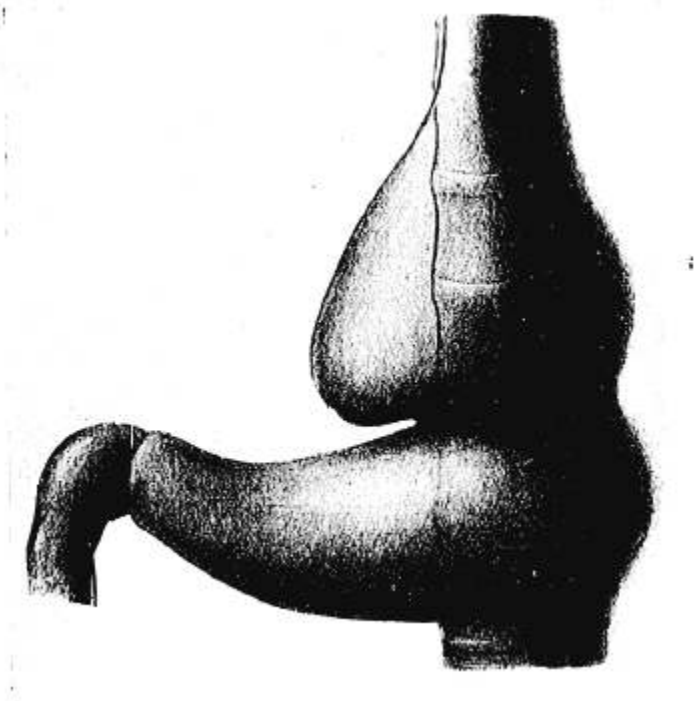

FIG. 2.—Cardio-spasm.

means had been given a fair trial, and suggested the Mikulicz operation, and to this I more than agreed.

The patient gladly grasped at some means of cure, and accepted the treatment, requesting the privilege of a visit to her home before submitting.

She returned, and came under my care in the same institution on March 6, 1904; was given calomel, and several hours later, the stomach was washed out with two pints of salt solution. The latter was repeated at noon of the day of the operation.

*Operation, March 7, 1904.*—Median epigastric incision about five inches long. Stomach easily exposed, was found lying in an absolutely transverse position, and contracted so that it was less in diameter than the large intestine. An incision was made in the long axis of the stomach, sufficient to admit the hand, in this instance about four inches long. (See Fig. 1.)

The cardia readily located, but impossible to introduce a finger. Dr. Lockwood, at my suggestion, passed an œsophageal bougie, and while holding my finger in the neighborhood of the cardia, I could feel, through the stomach's lesser curvature, the bougie passing down toward the right, then sweep over to the left, describing a distinct sickle curve; then the point entered the cardia, and passed into the stomach. The bougie was then gradually withdrawn, and followed by my index finger. After this it was an easy matter to introduce the second finger, and proceed with the dilatation (Fig. 1). The impression gained by visual observation of the stomach, and palpation of the walls of the œsophagus, is schematically represented by Fig. 2.

After the second finger, a third was introduced, stretching the non-resisting cardia fully four to six c.m. as suggested by Mikulicz. While the two fingers were in the œsophagus, up to the metacarpo-phalangeal junction, I struck by the absence of contact with the walls. Separating the fingers as widely as possible, I was just able to come in contact with the lateral surfaces. After completely outlining the walls by palpation, the impression of size and shape were given as shown in the illustration.

The pouch was located chiefly to the right of the spinal column, the vertebræ being readily outlined through the posterior wall. The opening in the stomach was closed by three rows of

sutures, the first and second being continuous chain stitch, and the third (Lembert).

Nothing of any note occurred after the operation, except bloody vomiting for twenty-four hours, and that on the ninth post-operative day a small sinus developed in the wound, which closed in three or four days. On the afternoon of the 8th of March a small quantity of water was allowed by mouth; nourishment entirely by rectum. Liquid nourishment was given by the mouth in small quantities on the third day; a raw egg on the fifth day; and on the seventh post-operative day she was given soft-boiled egg and bread, baked potato and gravy at different times.

From this time on nourishment of the more solid variety was given, and rectal alimentation was discontinued on the ninth day. The patient was discharged on the twenty-first day.

Numbers of grateful letters have been received from the patient, all containing the satisfactory news of increase in weight, and that no more of the former symptoms exist whatever.

At the close of the first year, she wrote that a gain of 35 pounds had been noted in her weight. About two months ago, she called upon Dr. Lockwood and myself, and stated that she was still a cured case, and had added a few more pounds to her weight of April second.

Mikulicz, in the "Deutsche Medicinische Wochenschrift," of January and February, 1904, has contributed quite an extensive article titled, "Zur Pathologie und Therapie der Cardio Spasmus," and reports four cases, two over one and a half years, and two about nine months post-operative duration, in which he calls attention to the differential diagnosis of these cases from carcinoma, diverticulum and stenosis, and dismisses the questions by citing but two of the symptoms and signs of this disease, both of which were well marked in this case. First the pear, or flask-shaped dilatation, invading the lower one third to two-thirds, which may be of such dimensions as to contain from a few ounces to two pints and over, and that owing to the spasm at the cardia the neck of the flask or small end of the pear-shaped dilatation is always upward (see illustration). The contents of this dilatation can be siphoned off, irrespective of those of the stomach, etc.

Second, the dysphagia of cardial type, well expressed in the history of my case, and attributable to the retained contents producing an erosion, or œsophagitis accompanied with erosions.

Under the question of ætiology, numbers of causes are given in his article, among them being. (I), primary cardio spasm (Mikulicz and Meltzer); (II), primary atony of the muscalature of the œsophagus (Rosenstein); (III), synchronosis paralysis of the circular œsophageal fibres; with spasm of the cardia due to a vagus involvement (Kraus); (IV), congenital, (Fleiner); (V), primary œsophagitis, (Martin).

The operation performed by me in this case was after the method of Mikulicz, as briefly but very indefinitely described in the above journal.

Treatment in these cases at this date resolves itself more into a mechanical than an operative treatment, with the latter as a final resort when instrumentation fails.

Mikulicz' idea in manual divulsion of the cardia was to produce a similar effect to that found in stretching any sphincter to a point productive of paralysis. Whether he felt that by producing such paralysis and allowing of constant emptying, the muscle would return I do not know, but personally I feel that this effect should and could be obtained by this means.

That this paralysing effect is possible with properly constructed instruments, must be admitted, and recently H. Straus reports in the "Kleinsche Woch," No. 49, 1904, one case of a male 30 years of age, with a history of ten years' duration, cured or markedly improved by the use of a stomach tube, to the distal end (above the eye) of which an inflatable rubber bag is attached, in such manner as to appear that the tube had passed through the bag's or balloon's centre. To the side of the stomach tube, a very small-calibred rubber tube is attached, that connects with the inflatable bag. This tube terminates proximally in a mouth piece through which air is blown. A safeguard in the shape of a mercurial pressure, regulating apparatus is used.

This instrument is introduced so that the bag when in the stomach is in a deflated condition, then air is blown in until the mercurial gauge showed pressure equal to complete

inflation. Air is then let out so as to partially deflate the bag, and then the tube withdrawn sufficiently to engage the distended bag in the cardia, and eventually pull it through. Numerous sittings are given.

Dr. Lockwood has devised an ingenious instrument, on the Kohlman uretheral dilator pattern, but has discarded it owing to its proving unsatisfactory. The same in a certain sense must be admitted of all instruments devised for this purpose, for the following reasons: Danger of rupture of the tissues by an instrument that cannot give the accurate impression of resistance that is given to the finger; inability to properly perceive the proper location by these devices, and thereby needlessly cause unnecessary discomfort; that in the rubber-bag variety, if the cardia is rather resisting, the air being driven downward, one of two things will occur: either the bag will rupture into the stomach, a matter of no consequence, or by forcible pulling, the air bag will flatten out and may produce serious visceral lacerations.

In conclusion I would suggest the following:

The use of some apparatus allied to Kraus', but with little force used in its extraction. Should several sittings not be followed by evidence of improvement and cure, that the operation of gastrostomy, with manual dilatation, as detailed above, should be done.